

**FIRST RECORD OF THE PLANT BUG SUBFAMILY PSALLOPINAE
(HETEROPTERA: MIRIDAE) FROM JAPAN, WITH DESCRIPTIONS OF
THREE NEW SPECIES OF THE GENUS *PSALLOPS* USINGER**

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Abstract.—The plant bug subfamily Psallopinae Schuh is reported from Japan for the first time. The discovery also reveals the northernmost distributional record for the subfamily. Three Japanese species of the genus *Psallops* Usinger are described as new: *P. myiocephalus*, n. sp., a temperate zone inhabitant from Honshu and Kyushu, and *P. nakatanii*, n. sp. and *P. yaeyamanus*, n. sp. from Ishigaki and Iriomote Islands (Yaeyama Group) of the Ryukyus. A key and photographs are provided to distinguish the three Japanese members of *Psallops*.

Key Words: Heteroptera, Miridae, Psallopinae, *Psallops*, new species, Japan

Schuh (1976) established the plant bug subfamily Psallopinae which is currently represented only by five species in two genera, *Psallops grandoculus* Linnavuori and Alamy, *P. oculatus* Usinger, *P. ponapensis* Carvalho, *P. yapensis* Carvalho, and *Isometocoris blantoni* Carvalho and Sailer, and by a Baltic amber fossil, *Isometopsallops schuhi* Herczek and Popov (Schuh 1995). The five modern members are known from Panama, Saudi Arabia and Micronesia.

Recently, I obtained some unique Japanese specimens from my own surveys and from colleagues. These specimens were found to represent three undescribed species belonging to the genus *Psallops*, and they are described below.

All measurements in the text are given in mm. The type specimens are deposited in Biological Laboratory, Hokkaido University of Education, Sapporo, Japan.

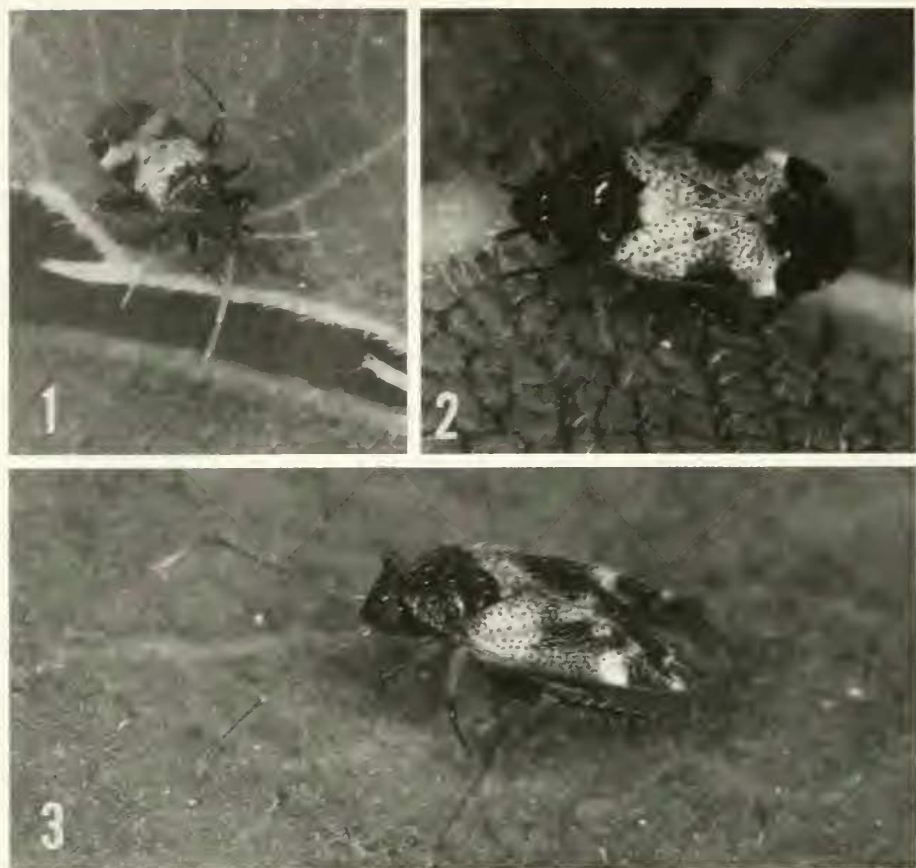
Genus *Psallops* Usinger

Psallops Usinger 1946: 87. Type species: *P. oculatus* Usinger 1946, monotypic.

Usinger (1946) described *Psallops* as a member of the Phylinae, and Schuh (1976) later established the subfamily Psallopinae for it. Subsequently, Henry and Maldonado (1982) reviewed the subfamily to which the Neotropical monotypic genus *Isometocoris* Carvalho and Sailer was transferred from the Isometopinae.

Schuh (1976) indicated that *Psallops* is defined by the finely upturned anterior pronotal margin, 1 or 2 cells on the membrane, 9 metafemoral trichobothria of which 7 are accompanied with the trichomae, 2-segmented tarsi, a subapical tooth of the claw, simple form of the vesica, and phallosome fused with the phallosome. The Japanese members also possess these characters, except for the vesica with some sclerotized appendages.

In addition to the above characters, the three Japanese species are recognized by the following combination of characters: Body elongate oval; dorsal surface with uniformly distributed, simple, suberect, brown to dark-brown setae; head fuscous,



Figs. 1-3. Adults of *Psallops* spp. 1, *P. myiocephalus*, holotype ♂ on *Quercus acutissima*. 2, *P. nakatanii*, ♀. 3, *P. yaeyamanus*, ♀.

short, subtriangular in dorsal view; eyes enlarged especially in ♂, occupying most part of head, bearing short setae; vertex very narrow, with continuous basal transverse carina; rostrum long, reaching or extending beyond apex of metacoxa; pronotum fuscous, roughened, less than half length of basal width, shallowly and irregularly punctate, somewhat transversely rugose; mesoscutum fuscous; scutellum dark, with more or less pale apex; hemelytra whitish brown, with some dark, symmetrical markings or spots, provided with small, dark, scattered and somewhat convex spots; metafemur fuscous; tibia with long, pale spines; abdomen unicolorously dark brown.

The discovery of a member of *Psallops* in Wakayama Prefecture of Honshu repre-

sents the northernmost distributional record for the subfamily.

Psallops myiocephalus Yasunaga,
new species
(Figs. 1, 4-8)

Description.— Head with silky, suberect setae, height 0.8 times as width including eyes in frontal view; vertex 0.34 (♂)/1.08 (♀) times as wide as an eye. Antenna dark brown; segment II yellowish or pale reddish brown; lengths of segments I-IV (♂/♀): 0.23/0.26, 0.77/0.76, 0.38/0.46, 0.30/0.33. Rostrum shiny dark brown. Pronotum fuscous, with uniformly distributed, dark, suberect setae; mesoscutum shiny chestnut brown; scutellum dark brown, with at least apical $\frac{2}{3}$ whitish; pleura widely reddish

brown, pruinose; ostiolar peritreme reddish brown. Hemelytra widely whitish brown, with scattered small spots somewhat reddish or sanguineous; corium slightly obscure at inner apical part, mesially with a dark, triangular, large marking continuing to mesial embolium; clavus with an obscure spot mesially; cuneus dark brown, with pale apex in ♀; apex of ♂ left cuneus dark as in Fig. 1; membrane grayish brown. Coxae unicolorously creamy yellow; legs dark brown; basal part of each femur, apical parts of meso- and metatibiae, and all tarsi yellowish brown; lengths of metafemur, tibia and tarsus (♂/♀): 0.86/0.88, 1.44/1.50, 0.35/?. Male genitalia as in Figs. 4–8; vesica with two subapical spines (8).

Dimensions: ♂/♀: Body length 2.5/2.7; head width incl. eyes 0.61/0.57; vertex width 0.09/0.20; mesal pronotal length 0.39/0.38; basal pronotal width 0.88/0.90; width across hemelytra 1.04/1.13.

Holotype.—♂, Konoura, Sotome T., Nagasaki Pref., Kyushu. ex *Quercus acutissima*, 4. viii. 1996, T. Yasunaga.

Paratype.—1 ♀, Wakaura, Wakayama C., Wakayama Pref., Honshu. 25. viii. 1991. M. Kitabata.

Etymology.—From the Greek, myia (= fly) in combination with cephalus (kephalos) (= head), referred to the fly-like head of this new species.

Remarks.—Resembling *Psallops oculus* Carvalho, the present new species is easily distinguished by the different coloration on the scutellum and hemelytra (see Carvalho. 1956).

I collected a male of *P. myiocephalus* from an oak, *Quercus acutissima* (Fagaceae) in Nagasaki Prefecture of Kyushu. This is the only species of *Psallops* known from a temperate zone.

Psallops nakatanii Yasunaga,
new species
(Figs. 2, 9–10)

Description.—Head shagreened, with silky, upright pubescence, height 0.69 as long as width including eyes in frontal

view; vertex 0.28 (♂)/1.13 (♀) as wide as an eye. Antenna reddish brown, except for segment I infuscate; lengths of segments I–IV (♂/♀): 0.23/0.24, 0.84/0.75, 0.19/0.36, 0.24/0.28. Rostrum shiny brown; segment I dark brown; scutellum sanguineous anteromesally, with apical $\frac{2}{3}$ whitish brown; pleura widely reddish brown, with ostiolar peritreme yellow. Clavus with a distinct dark mesial spot and extreme apex infuscated; semi-circular large mesial marking of corium continuing to embolium; dark, inner apical marking of corium distinct; membrane somber grayish brown. Coxae pale brown; legs dark brown, partly tinged with red; pro- and mesofemora yellow basally; apical parts of tibiae and whole tarsi yellowish brown; lengths of metafemur, tibia and tarsus (♂/♀): 0.96/0.88, ?/1.44, ?/0.29. Male genitalia as in Figs. 9–10; vesical spines long and slender (10).

Dimensions: ♂/♀: Body length 2.8/2.4–2.9, head width 0.68/0.60–0.62, vertex width 0.08/0.22–0.23, mesal pronotal length 0.41/0.40, basal pronotal width 0.92/0.96–0.99, and width across hemelytra 1.08/1.12–1.17.

Holotype.—♂, Funaura, Iriomote Is., Yaeyama Group, Ryukyus, light trap. 10. v. 1993. Y. Nakatani.

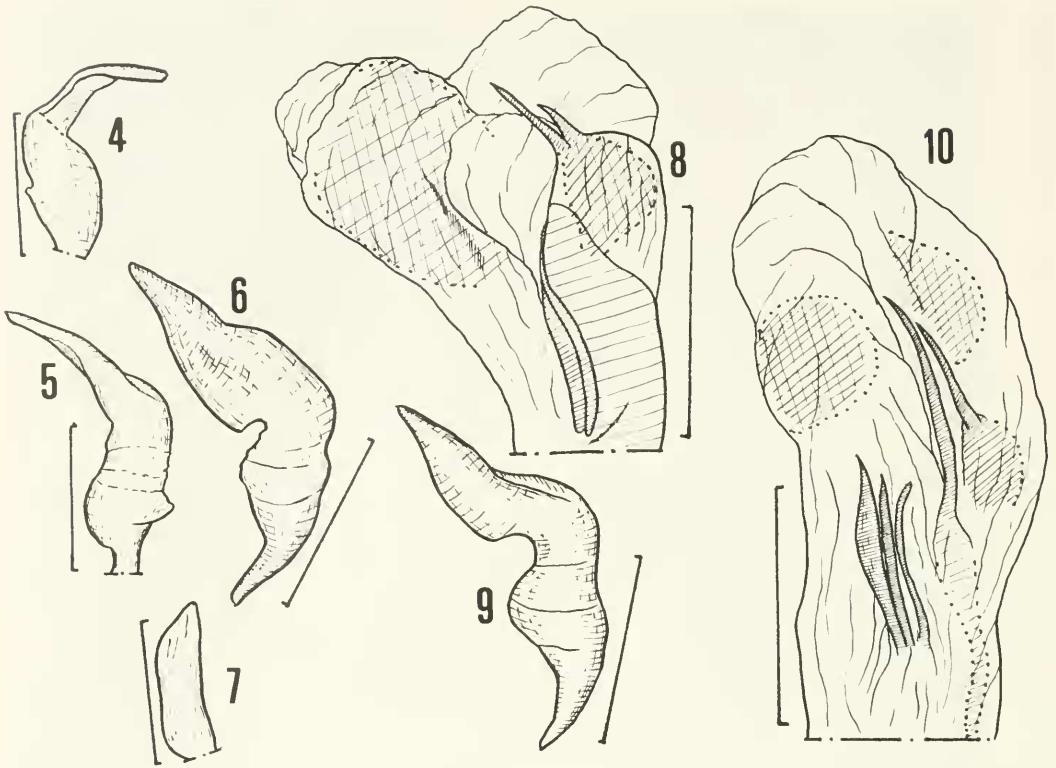
Paratypes.—1 ♀, Omoto, Ishigaki Is., Yaeyama Group, Ryukyus, light trap, 21. v. 1998, K. Takahashi; 1 ♀, Sakae, Ishigaki Is., 27. iii. 1999, K. Takahashi.

Etymology.—Named after Dr. Yukinobu Nakatani, who collected and offered me the holotype specimen.

Remarks.—This new species is closely allied to the preceding one, from which it can be distinguished by the characters in the key and different structure of the male genitalia.

Psallops yaeyamanus Yasunaga,
new species
(Fig. 3)

Description.—*Female:* Dorsal surface with pale vestiture, lacking darkened setae. Head with silvery, suberect pubescence,



Figs. 4–10. Male genitalia of *Psallops myiocephalus* (4–8) and *P. nakatanii* (9–10). 4–6, 9, Left paramere. 7, Right paramere. 8, 10, Vesica. Scales: lines = 0.1 mm.

height 0.86 times as long as width including eyes in frontal view; vertex 0.84–0.91 times as wide as an eye. Antenna pale brown; segments III and IV dark brown; lengths of segments I–IV: 0.24–0.27, 0.88–0.93, 0.48–0.50, 0.32–0.36. Pronotal setae pale brown; mesoscutum shagreened; apical $\frac{1}{3}$ – $\frac{1}{2}$ of scutellum yellow; pleura widely reddish brown, with yellow ostiolar peritreme. Hemelytra with dark, wide marking forming almost continuous U- or W-shaped fascia posteriorly (Fig. 3); cuneus, except for yellow extreme apex, dark brown; membrane pale grayish brown. Coxae and legs yellowish brown; apex of each femur sanguineous; metafemur dark brown; basal half of metatibia darkened; lengths of metafemur, tibia and tarsus: 1.08–1.12, 1.76–1.80, 0.34–0.36. *Male*: Unknown.

Dimensions: ♀: Body length 2.9–3.3;

head width incl. eyes 0.63–0.65; vertex width 0.19–0.20; mesal pronotal length 0.47–0.48; basal pronotal width 1.00–1.06; width across hemelytra 1.28–1.32.

Holotype.—♀, Mt. Uehara, Iriomote Is., Ryukyus, 12. v. 1993, T. Yasunaga.

Paratypes.—Ryukyus, Yaeyama Group: 1 ♀, Omoto, Ishigaki Is., 9. v. 1993, T. Yasunaga; 1 ♀, same locality, light trap, M. Tomokuni; 1 ♀, Takeda, Ishigaki Is., 27. xi. 1998, K. Takahashi; 1 ♀, Mt. Buzama, Ishigaki Is., 16. iv. 1998, K. Takahashi; 1 ♀, same locality, 13. xii. 1998, K. Takahashi; 1 ♀, Komi, Iriomote Is., 13. v. 1993, T. Yasunaga.

Etymology.—Named after the Yaeyama Group of the Ryukyus, type locality of this new species.

Remarks.—This new species is easily distinguished from *P. myiocephalus* and *P.*

nakatani by the generally larger size, pale setae on the dorsum, and the widely infuscated hemelytra.

Psallops yaeyamanus was collected by sweeping broad-leaved evergreen trees, and by a light trap.

KEY TO JAPANESE SPECIES OF *PSALLOPS*

- 1. Antennal segment I pale brown; setae on pronotum pale; scutellum pale on apical 1/5-1/2; dark maculation on hemelytra large, forming an almost continuous fascia (Fig. 3)
 *yaeyamanus*
- Antennal segment I fuscous; pronotal setae dark; more than apical 1/3 of scutellum pale; dark markings on hemelytra symmetrically divided to each side 2
- 2. Mesial dark marking on corium to embolium triangular; dark spots on inner apical part of corium and mesial part of clavus obscure; apex of clavus pale (Fig. 1) *myiocephalus*
- Mesial dark marking on corium to embolium semi-circular, dark spots on inner apical part of corium and mesial clavus distinctly fuscous; apex of clavus infuscated (Fig. 2) *nakatani*

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